

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on page 5, line 14 as follows:

The mass production with the use of a sheet-type sputtering device was studied here. In the case of using titanium oxide as the transmittance adjustment layer, when a large number of sample layers were formed, significant variations in transmittance as well as reflectance were observed to have occurred. As a result of a detailed review, the ~~inventers~~inventors have found that such variations are caused by large variations in thickness of the titanium oxide layer. Namely, it became clear from the experiment that the optical characteristics are very severe to the thickness of the transmittance adjustment layer, and it was found that a film formation rate and optical properties (refractive index, extinction coefficient) of titanium oxide are highly sensitive to an amount of oxygen in the film formation atmosphere, and thereby variations in trace ~~amount~~amounts of oxygen make the film formation rate unstable (the film formation rate decreases with a large amount of oxygen present) to have a large effect upon the reflectance, transmittance, and the like, of the disk. The oxygen (or water) on issue in this review as a cause of the instable film formation rate is presumably the one having been absorbed to a resin substrate and removed during the film formation to exert an effect. Nevertheless, titanium oxide has the most favorable optical properties in terms of the laser beam wavelength which was used for this review (titanium oxide has a large refractive index and a high light-transmittance property). It is thus essential to solve the above-mentioned problem and then develop a disk with a configuration using titanium oxide.

Please amend the paragraph beginning on page 6, line 22 as follows:

Further, a second object of the present invention is to provide an optical information recording medium having a single-sided multilayered configuration with a high transmittance, by using the titanium oxide film as a transmittance adjustment layer, and a method for manufacturing the same.:

Please amend the paragraph beginning on page 7, line 3 as follows:

In order to solve the above-mentioned problem, assiduous studies were conducted based upon the finding that the substance having been absorbed to a resin substrate is removed during the film formation to ~~exerts~~ exert an effect, and it was consequently found possible to form a substantially uniform titanium oxide layer in such a manner that a dielectric layer, whose refractive index is close to that of the titanium oxide layer or the substrate and whose film formation rate is not affected by the presence of oxygen, is formed on the substrate side and the titanium oxide layer is then formed on the dielectric layer.

Please amend the paragraph beginning on page 13, line 19 as follows:

As a material for the dielectric layers 5 and 7, ~~used can be~~ a material mainly composed of an oxide of Al, Si, Ta, Mo, W, Zr or the like, a sulfide such as ZnS or the like, a nitride of Al, B, Ge, Si, Ti Zr or the like, or a fluoride of Pb, Mg, La or the like can be used. In the present embodiment, ZnS-20 mol% SiO₂ was used for the dielectric layer 7 while GeN was used for the dielectric layer 5.

Please amend the paragraph beginning on page 18, line 11 as follows:

The difference in variations between these two transmittances can be explained using the difference in variations in thickness of the transmittance adjustment layer. Here ~~shown~~ the results of reviewing the respective dependencies of sputtering rates of titanium oxide and niobium oxide upon an amount of oxygen are shown. Either of the two materials was produced by mixing Ar gas and O₂ gas in various ratios under the same film formation conditions as used in the present embodiment, using a sputtering target with which a DC discharge can be performed so as to set a sputtering power to 2 kW and a sputtering gas pressure to 0.3 Pa, and the obtained sputtering rates were then compared. The results are shown in Fig. 5.

Please amend the paragraph beginning on page 18, line 24 as follows:

It is revealed from Fig. 5 that the sputtering rate of titanium oxide depends upon O₂ in a larger degree than that of niobium oxide, and thus significantly varies with an increase in the

amount of O_2 added.

Please amend the paragraph beginning on page 19, line 3 as follows:

For this reason, there are differences in moisture absorbing ~~state~~ states among the 100 substrates. Titanium oxide whose sputtering rate greatly depends upon O_2 is significantly affected by the increase in amount of O_2 , and the thickness of the titanium oxide layer thus varies. On the other hand, it is thought that niobium oxide whose sputtering rate depends upon O_2 in a small degree is slightly affected by the increase in amount of O_2 , and the thickness of the niobium oxide layer varies in a small degree.

Please amend the paragraph beginning on page 20, line 1 as follows:

As thus described, it was found that the dependency of the sputtering rate of the niobium oxide upon O_2 is smaller than that of titanium oxide. It is noted that the refractive index of niobium oxide is slightly smaller than that of titanium oxide, causing a small decrease in transmittance although the transmittance adjustment layer is to serve to adjust the transmittance. However, it goes without saying that, since the variations in sputtering rate ~~are resulted~~ result in large variations in disk characteristics, it is desirable to use niobium oxide, whose sputtering rate depends on O_2 in a small degree, ₁ to make the transmittance adjustment layer double-layered so as to suppress the variations in disk characteristics.